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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER	
PATEL, CHANDRAHAS B	

ART UNIT	PAPER NUMBER
2616	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/811,000	MABE ET AL.	
	Examiner	Art Unit	
	Chandrahas Patel	2616	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *03 June 2008*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-22* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-22* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. Applicant's request for reconsideration of the finality of the rejection of the last Office action is persuasive and, therefore, the finality of that action is withdrawn.

Claim Rejections - 35 USC § 103

2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

3. Claims 1, 5, 9, 13, 17, 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Goringe et al. (USPN 7,200,122) in view of Kobayashi (USPN 7,200,116).

Regarding claim 1, Goringe teaches a process for use as part of a routing protocol in an ad hoc digital communications network wherein the network is comprised of a plurality of nodes **[Fig. 1]** each of which includes a router including a routing table having routing information defining routing pathways through the network and including one or more metrics defining message transfer characteristics for each such routing pathway **[Fig. 2, 232]**, comprising the steps of: a) having a plurality of nodes exchange routing advertisement messages including routing pathways through the network and including one or more metrics defining message transfer costs for each routing pathway **[Col. 4, lines 6-33, plurality of routers exchange messages to get each others path connections]**; and d) having the updated routing table including adjusted metrics advertised across the network for the purpose of updating the routing tables of other nodes in the network **[Col. 8, lines 44-51, links are advertised across the network and listed in the router]**.

However, Goringe does not teach b) having one of the nodes check to determine if it comprises an advantaged node which may experience heavy network traffic potentially leading

to network communications traffic congestion; c) having an advantaged node adjust one of the metrics of a plurality of routing pathways through the node entered into a routing table to form an updated routing table.

Kobayashi teaches b) having one of the nodes check to determine if it comprises an advantaged node which may experience heavy network traffic potentially leading to network communications traffic congestion **[Col. 5, lines 11-19, the congestion information received determines that the router is in congestion state]**; c) having an advantaged node adjust one of the metrics of a plurality of routing pathways through the node entered into a routing table to form an updated routing table **[Col. 5, lines 16-30, the paths are updated in the routing table to form an updated routing table]**.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to adjust one of the metrics of a routing table so that packets can be prevented from being discarded or delayed **[Col. 5, lines 11-30]**.

Regarding claim 5, Goringe teaches a process for use as part of a routing protocol in an ad hoc digital communications network featuring differentiated services wherein the network is comprised of a plurality of nodes **[Fig. 1]** each of which includes a router having multidimensional routing information reflecting different code-point levels and defining routing pathways through the network for each code-point and one or more metrics defining message transfer characteristics for each such routing pathway for each code-point **[Fig. 7]**, comprising the steps of: a) having a plurality of nodes exchange routing advertisement messages including routing pathways for each code-point through the network and including one or more metrics defining message transfer costs for each routing pathway **[Col. 4, lines 6-51, plurality of**

routers exchange messages to get each others path connections, more than one routing protocols in use will generate more than one routing topology teaches different routing pathway for each code-point]; and d) having the updated routing table advertised across the network for the purpose of updating the routing tables of other network nodes **[Col. 8, lines 44-51, links are advertised across the network and listed in the router]**.

However, Goringe does not teach b) having one of said nodes check to determine if it comprises an advantaged node which may experience heavy network traffic potentially leading to network communications traffic congestion; c) having an advantaged node increase one or more of the metrics of a plurality of routing pathways through said node entered into a routing table by amounts based on the code-point of the entry to form an updated routing table.

Kobayashi teaches b) having one of the nodes check to determine if it comprises an advantaged node which may experience heavy network traffic potentially leading to network communications traffic congestion **[Col. 5, lines 11-19, the congestion information received determines that the router is in congestion state]**; c) having an advantaged node increase one or more of the metrics of a plurality of routing pathways through the node entered into a routing table by amounts based on the code-point of the entry to form an updated routing table **[Fig. 4, number of Routers is increased by one and Col. 5, lines 16-30, the paths are updated in the routing table to form an updated routing table]**.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to adjust one of the metrics of a routing table so that packets can be prevented from being discarded or delayed **[Col. 5, lines 11-30]**.

Regarding claim 9, Goringe teaches a process for use as part of a routing protocol in a mobile ad hoc digital communications network composed of a plurality of nodes **[Fig. 1]** each of which includes a router having a routing table including routing information defining routing pathways through the network and one or more metrics defining message transfer characteristics for each such routing pathway **[Fig. 2, 232]**, comprising the steps of: a) having a plurality of nodes exchange routing information including routing pathways through the network and one or more metrics defining message transfer costs for each routing pathway **[Col. 4, lines 6-33, plurality of routers exchange messages to get each others path connections]**; and d) having the updated routing table including adjusted metrics advertised across the network for the purpose of updating the routing tables of other network nodes **[Col. 8, lines 44-51, links are advertised across the network and listed in the router]**.

However, Goringe does not teach having one of the nodes calculate a measure of the degree to which it comprises an advantaged node; c) having an advantaged node increase one or more of the metrics of a plurality of pathways through the node entered into its routing table to form an updated routing table as a function of the measure of the degree to which it comprises an advantaged node.

Kobayashi teaches b) having one of the nodes calculate a measure of the degree to which it comprises an advantaged node **[Col. 5, lines 11-19, the congestion information received determines that the router is in congestion state]**; c) having an advantaged node increase one or more of the metrics of a plurality of routing pathways through the node entered into a routing table by amounts based on the code-point of the entry to form an updated routing table **[Fig. 4,**

number of Routers is increased by one and Col. 5, lines 16-30, the paths are updated in the routing table to form an updated routing table].

It would have been obvious to one of ordinary skill in the art at the time the invention was made to adjust one of the metrics of a routing table so that packets can be prevented from being discarded or delayed **[Col. 5, lines 11-30]**.

Regarding claim 13, Goringe teaches a process for use as part of a routing protocol in a mobile ad hoc digital communications network comprising of a plurality of nodes **[Fig. 1]** each of which includes a router having a routing table including routing information defining routing pathways through the network and including one or more metrics defining message transfer characteristics for each such routing pathway **[Fig. 2, 232]**, comprising the steps of: a) having a plurality of nodes exchange routing advertisement messages including routing pathways through the network and one or more metrics defining message transfer cost metrics for each routing pathway **[Col. 4, lines 6-33, plurality of routers exchange messages to get each others path connections]**; and d) having the updated routing table advertised across the network for the purpose of updating the routing tables of other network nodes **[Col. 8, lines 44-51, links are advertised across the network and listed in the router]**.

However, Goringe does not teach b) having one or more of the nodes check to determine if they comprise partially disadvantaged nodes; c) having a partially disadvantaged node increase one or more of the metrics of a plurality of routing pathways through the node entered into a routing table by a substantial amount in order to discourage all but essential traffic through the node and form an updated routing table.

Kobayashi teaches b) having one or more of the nodes calculate a measure of the degree to which it comprises partially disadvantaged nodes **[Col. 5, lines 11-19, the congestion information received determines that the router is in congestion state]**; c) having a partially disadvantaged node increase one or more of the metrics of a plurality of routing pathways through the node entered into a routing table by a substantial amount in order to discourage all but essential traffic through the node and form an updated routing table **[Fig. 4, number of Routers is increased by one and Col. 5, lines 16-30, the paths are updated in the routing table to form an updated routing table and Col. 6, lines 45-53 avoids the congested node]**.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to adjust one of the metrics of a routing table so that packets can be prevented from being discarded or delayed **[Col. 5, lines 11-30]**.

Regarding claim 17, Goringe teaches a process for use as part of a routing protocol in a mobile ad hoc digital communications network composed of a plurality of nodes **[Fig. 1]** each of which includes a router having a routing table defining routing pathways through the network and including one or more metrics defining message transfer characteristics for each such routing pathway **[Fig. 2, 232]**, comprising the steps of: a) exchanging routing information between a plurality of network nodes including routing pathways through the network and one or more metrics defining message transfer costs for each routing pathway; **[Col. 4, lines 6-33, plurality of routers exchange messages to get each others path connections]**; and d) advertising the updated routing table including adjusted metrics across the network for the purpose of updating the routing tables of other network nodes. **[Col. 8, lines 44-51, links are advertised across the network and listed in the router]**.

However, Goringe does not teach generating a measure the degree to which one of the nodes may comprise an advantaged node which may experience unduly heavy network communications traffic; c) adjusting one or more of the metrics of a plurality of routing pathways through the node as entered into its routing table as a function of the measure of the degree to which the node is an advantaged node to form an updated routing table to be used for advertising routing information.

Kobayashi teaches generating a measure the degree to which one of the nodes may comprise an advantaged node which may experience unduly heavy network communications traffic; **[Col. 5, lines 11-19, the congestion information received determines that the router is in congestion state]**; c) adjusting one or more of the metrics of a plurality of routing pathways through the node as entered into its routing table as a function of the measure of the degree to which the node is an advantaged node to form an updated routing table to be used for advertising routing information; and **[Fig. 4, number of Routers is increased by one and Col. 5, lines 16-30, the paths are updated in the routing table to form an updated routing table]**.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to adjust one of the metrics of a routing table so that packets can be prevented from being discarded or delayed **[Col. 5, lines 11-30]**.

Regarding claim 20, Goringe teaches a process for use as part of a routing protocol in an ad hoc digital communications network featuring differentiated services wherein the network is comprised of a plurality of nodes **[Fig. 1]** each of which includes a router having multidimensional routing information reflecting different code-point levels and defining routing pathways through the network for each code-point and one or more metrics defining message

transfer characteristics for each such routing pathway for each code-point **[Fig. 7]**, comprising the steps of: a) exchanging routing information between a plurality of nodes including routing pathways for each code-point through the network and including one or more metrics defining message transfer costs for each routing pathway **[Col. 4, lines 6-51, plurality of routers exchange messages to get each others path connections, more than one routing protocols in use will generate more than one routing topology teaches different routing pathway for each code-point]**; and d) advertising the updated routing table including adjusted metrics across the network for the purpose of updating the routing tables of other nodes in the network **[Col. 8, lines 44-51, links are advertised across the network and listed in the router]**.

However, Goringe does not teach b) determining if a node comprises an advantaged node which may experience heavy network traffic potentially leading to network congestion; c) adjusting one or more of the metrics for a plurality of routing pathways through an advantaged node as entered into its routing table by amounts based on the code-point level of the entry to form an updated routing table.

Kobayashi teaches b) determining if a node comprises an advantaged node which may experience heavy network traffic potentially leading to network congestion **[Col. 5, lines 11-19, the congestion information received determines that the router is in congestion state]**; c) adjusting one or more of the metrics for a plurality of routing pathways through an advantaged node as entered into its routing table by amounts based on the code-point level of the entry to form an updated routing table **[Fig. 4, number of Routers is increased by one and Col. 5, lines 16-30, the paths are updated in the routing table to form an updated routing table]**.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to adjust one of the metrics of a routing table so that packets can be prevented from being discarded or delayed **[Col. 5, lines 11-30]**.

4. Claims 2, 3, 6, 7, 10, 11, 15, 18, 19, 21, 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Goringe et al. (USPN 7,200,122) in view of Kobayashi (USPN 7,200,116) and Elliott (USPN 7,139,262).

Regarding claims 2, 6, 21, Goringe teaches the process as discussed in rejection of claims 1, 5, 20.

However, Goringe does not teach having each node check to determine if it comprises an advantaged node includes the step of having the node calculate a ratio of the node's neighbors to the average number of its neighbors' neighbors as a basis for determining if it is an advantaged node.

Elliott teaches having each node check to determine if it comprises an advantaged node includes the step of having the node calculate a ratio of the node's neighbors to the average number of its neighbors' neighbors as a basis for determining if it is an advantaged node **[Fig. 8 and Col. 7, lines 41-56, identifies number of neighbors based on number of hops away]**.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have node calculate a ratio of the node's neighbors to the average of its neighbors' neighbors to determine if it is an advantage node so that routing table of subsequent nodes can be updated accordingly by locating the advantage node **[Col. 2, lines 16-28]**.

Regarding claims 3, 19, 22, Goringe teaches routing protocol can comprise DSDV protocol **[Col. 1, lines 46-53, DSDV is distance-vector protocol]**.

However, Goringe does not teach adjusting one or more metrics of a plurality of routing pathways comprises incrementing the hop counts of the pathways.

Elliott teaches metric comprises hop count and step of adjusting one or more metrics of a plurality of routing pathways comprises incrementing the hop counts of the pathways **[Col. 7, lines 41-67 – Col. 8, lines 1-3]**.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to increment the hop counts of the pathways since introduction of new paths affects all other distances in the network **[Col. 7, lines 65-67]**.

Regarding claims 7, 15, Goringe further teaches routing protocol comprises DSDV protocol and one or more metrics comprise hop count **[Col. 1, lines 46-53, DSDV is distance-vector protocol]**.

Regarding claim 10, Goringe teaches the process as discussed in rejection of claim 9.

However, Goringe does not teach the measure of the degree to which a node comprises an advantage node is based on a ration of anode's neighbors to the average number of its neighbor nodes' neighbors.

Elliott teaches the measure of the degree to which a node comprises an advantage node is based on a ration of a node's neighbors to the average number of its neighbor nodes' neighbors **[Col. 7, lines 41-56, identifies number of neighbors based on number of hops away]**.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have node calculate a ratio of the node's neighbors to the average of its neighbors'

neighbors to determine the measure of the degree to which a node comprises and advantage node so that routing table of subsequent nodes can be updated accordingly by the degree to which the node comprises advantage node **[Col. 2, lines 16-28]**.

Regarding claims 11, 18, Goringe teaches routing protocol comprises DSDV protocol and one or more metrics comprise hop count **[Col. 1, lines 46-53, DSDV is distance-vector protocol]**.

However, Goringe does not teach the measure of the degree to which a node comprises an advantage node is based on a ration of anode's neighbors to the average number of its neighbor nodes' neighbors.

Elliott teaches the measure of the degree to which a node comprises an advantage node is based on a ration of anode's neighbors to the average number of its neighbor nodes' neighbors **[Col. 7, lines 41-56]**.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have node calculate a ratio of the node's neighbors to the average of its neighbors' neighbors to determine the measure of the degree to which a node comprises and advantage node so that routing table of subsequent nodes can be updated accordingly by the degree to which the node comprises advantage node **[Col. 2, lines 16-28]**.

5. Claims 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Goringe et al. (USPN 7,200,122) in view of Kobayashi (USPN 7,200,116) and Elliott (USPN 7,139,262) as applied to claim 2 above, and further in view of Kao et al. (USPN 7,212,490).

Regarding claim 4, Goringe teaches routing protocol comprises a link state protocol **[Col. 4, lines 19-26]**.

However, Goringe does not teach metric comprises latency.

Kao teaches metric comprises latency **[Abstract]**.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have transfer cost based on latency so that congestion between the nodes can be determined **[Col. 3, lines 48-57]**.

6. Claims 8, 12, 16 is rejected under 35 U.S.C. 103(a) as being unpatentable over Goringe et al. (USPN 7,200,122) in view of Kobayashi (USPN 7,200,116) and Kao et al. (USPN 7,212,490).

Regarding claims 8, 12, 16, Goringe teaches routing protocol comprises a link state protocol **[Col. 4, lines 19-26]**.

However, Goringe does not teach metric comprises latency.

Kao teaches metric comprises latency **[Abstract]**.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have transfer cost based on latency so that congestion between the nodes can be determined **[Col. 3, lines 48-57]**.

7. Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Goringe et al. (USPN 7,200,122) in view of Kobayashi (USPN 7,200,116) and Sholander et al. (USPN 7,177,295).

Regarding claim 14, Goringe teaches the process as discussed in rejection of claim 13.

However, Goringe does not teach the step of having each node check to determine if it comprises a partially disadvantaged node includes the step of having the node check its available power reserves as a basis for determining if it may be a partially disadvantaged node.

Sholander teaches the node checks its available power reserves as a basis for determining if it may be a partially disadvantaged node **[Col. 8, lines 9-22, power level is used as one of the metric]**.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have each node check its available power so that QoS information can be determined **[Col. 8, lines 18-22]**.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Chandrahas Patel whose telephone number is (571)270-1211. The examiner can normally be reached on Monday through Thursday 7:30 to 17:00 EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ricky Ngo can be reached on 571-272-3139. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR

system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Ricky Ngo/
Supervisory Patent Examiner, Art Unit 2616

/Chandrahas Patel/
Examiner, Art Unit 2616